

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for replicating data from a storage device, comprising:

~~performing at least one read operation on a~~identifying one or more allocated storage locations on the storage device based, at least in part, on information in a file system associated with the storage device;

~~performing a read operation comprising an I/O access with respect to each of the one or more allocated storage locations;~~

recording ~~each~~ one or more I/O accesses performed with respect to the storage device in association with ~~the at least one~~ a read operation;

~~identifying-generating~~, based on the recorded I/O access information, one or more ~~a list of~~ data blocks on the storage device that contain valid data; and

replicating the data blocks that contain valid data.

2. (currently amended) The method according to claim 1, wherein the at least one read operation includes reading metadata associated with at least one ~~or more~~ file[[s]] on the storage device.

3. (currently amended) The method according to claim 2, wherein reading the metadata includes reading one or more of the following: a name of ~~the~~ a file, access permissions to ~~the~~ a file, a date of creation of ~~the~~ a file, or dates of modification of ~~the~~ a file.

4. (original) The method according to claim 1, further comprising cleaning a cache on a computer associated with the storage device before performing any read operations.

5. (currently amended) A method for replicating data from a storage device associated with a computer, comprising:

cleaning a cache on a computer associated with the storage device;

~~performing at least one read operation on a identifying one or more allocated storage locations on the~~ storage device based, at least in part, on information in a file system associated with the storage device;

causing the storage device to record ~~each~~ one or more I/O accesses performed with respect to the storage device in association with a the at least one read operation;

~~performing a read operation comprising an I/O access with respect to each of the one or more allocated storage locations, including metadata associated with files on the storage device;~~

identifying ~~generating~~, based on the I/O access information recorded by the storage device, a list of one or more data blocks on the storage device that contain valid data; and

replicating the data blocks that contain valid data.

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (cancelled)

10. (currently amended) A system to identify data blocks on a storage device that contain valid data, comprising:

a storage device configured to store data;

a first processor configured to:

~~perform at least one read operation on a~~ identify one or more allocated storage locations on the storage device based, at least in part, on information in a file system associated with the storage device; and

~~perform a read operation comprising an I/O access with respect to each of the one or more allocated storage locations; and~~

a second processor configured to:

record ~~each~~ one or more I/O accesses performed with respect to the storage device in association with a ~~the~~ at least one read operation;

wherein the first processor is further configured to:

identify one or more ~~generate a list of~~ data blocks on the storage device that contain valid data based, at least in part, on the recorded I/O access information; and

replicate the data blocks that contain valid data.

11. (currently amended) The system according to claim 10, wherein the at least one read operation includes reading metadata associated with at least one ~~or more~~ files on the storage device.

12. (currently amended) The system according to claim 11, wherein reading the metadata includes reading one or more of the following: a name of a ~~the~~ file, access permissions to a ~~the~~ file, a date of creation of a ~~the~~ file, or dates of modification of a ~~the~~ file.

13. (original) The system according to claim 10, further comprising a computer associated with the storage device.

14. (previously presented) The system according to claim 13, wherein the first processor resides on the computer.

15. (previously presented) The system according to claim 13, wherein the first processor is further configured to:

clean a cache on the computer before performing any I/O accesses.

16. (previously presented) The system according to claim 13, wherein the second processor is further configured to:

manage the storage operations of the computer.

17. (previously presented) The system according to claim 10, wherein the second processor comprises a filter driver.

18. (currently amended) An apparatus to identify data blocks on a storage device that contain valid data, comprising:

a storage device configured to store data;

a first processor configured to:

record I/O accesses performed with respect to the storage device in association with read operations; and

a second processor configured to:

perform at least one read operation on a ~~identify one or more allocated storage locations on the~~ storage device based on information in a file system associated with the storage device; and

instruct the first processor to record one or more I/O accesses performed with respect to the storage device in association with the at least one read operation[[s]]; ~~and~~

~~perform a read operation comprising an I/O access with respect to each of the one or more allocated storage locations;~~

wherein the first processor is further configured to:

identify one or more ~~generate a list of~~ data blocks on the storage device that contain valid data based, at least in part, on the I/O access information recorded by the first processor; and

replicate the data blocks that contain valid data.

19. (previously presented) The apparatus according to claim 18, wherein the second processor is further configured to:

clean a cache on a computer associated with the storage device before performing any I/O accesses.

20. (currently amended) The apparatus according to claim 18, wherein the at least one read operation includes reading metadata associated with at least one ~~or more~~ files on the storage device.

21. (currently amended) The apparatus according to claim 20, wherein reading the metadata includes reading one or more of the following: a name of a ~~the~~ file, access permissions to a ~~the~~ file, a date of creation of a ~~the~~ file, or dates of modification of a ~~the~~ file.

22. (previously presented) The apparatus according to claim 18, wherein the second processor comprises a software program.

23. (previously presented) The apparatus according to claim 18, wherein the second processor comprises a filter driver.

24. (previously presented) The apparatus according to claim 18, wherein the second processor is part of a storage management system.

25. (previously presented) The method of claim 1, wherein the file system is structured on a file-level.

26. (currently amended) The method of claim 5, wherein the at least one read operation includes reading metadata associated with one or more files on the storage device.

27. (currently amended) The method according to claim 26, wherein reading the metadata includes reading one or more of the following: a name of a ~~the~~ file, access permissions to a ~~the~~ file, a date of creation of a ~~the~~ file, or dates of modification of a ~~the~~ file.

28. (currently amended) The method according to claim 1, further comprising:
generating a list of the one or more data blocks that contain valid data; and
storing the list and the replicated data blocks in a memory.

29. (currently amended) A method to identify data blocks on a storage device that contain valid data, comprising:

performing at least one read operation on a ~~identifying one or more allocated storage locations on the~~ storage device based on a file system associated with the storage device;

~~performing a read operation comprising an I/O access with respect to each of the one or more allocated storage locations;~~

recording one or more each I/O accesses performed with respect to the storage device in association with the at least one a read operation; and

generating, ~~based at least in part on the recorded I/O access information,~~ a list of data blocks on the storage device that contain valid data based, at least in part, on the recorded I/O access information.

30. (previously presented) The method of claim 29, wherein the file system is associated with a virtual storage device used to manage storage of data on the storage device.

31. (previously presented) The method of claim 29, further comprising:
storing the list in a memory.

32. (currently amended) A system to identify data blocks on a storage device that contain valid data, comprising:

a storage device configured to store data;

a first processor configured to:

perform at least one read operation on a ~~identify one or more allocated storage locations on the~~ storage device based on a file system associated with the storage device; and

~~perform a read operation comprising an I/O access with respect to each of the one or more allocated storage locations; and~~

a second processor configured to:

record ~~each~~ one or more I/O accesses performed with respect to the storage device in association with a the at least one read operation;

wherein the first processor is further configured to:

generate a list of data blocks on the storage device that contain valid data based at least in part on the recorded I/O access information.

33. (previously presented) The system of claim 32, wherein the file system is associated with a virtual storage device used to manage storage of data on the storage device.

34. (previously presented) The system of claim 32, wherein the first processor is further configured to:

store the list in a memory.